

### **REMARKS**

This responds to the Office Action mailed on March 21, 2007. Reconsideration is respectfully requested.

Claims 1, 4, 9, 10, and 19 – 21 are amended, and claims 13 and 22 are canceled; as a result, claims 1 – 12, 14 – 21 and 23 - 30 are now pending in this application.

#### **Allowable Subject Matter**

Claims 14-18 and 23-30 were allowed.

#### **Objections to the Claims**

Claims 9, 10, and 19-22 were objected to due to informalities. Claims 9 and 10 have been amended to clarify the M-algorithm tree search and the T-algorithm tree search. Claims 19 – 22 have been amended to correct the informalities noted by the Examiner.

#### **§101 Rejection of the Claims**

Claims 1-13 and 19-22 were rejected under 35 U.S.C. § 101 because the claimed invention is directed to non-statutory subject matter.

Applicant's claims 1, 4, and 19 are directed to demapping symbols. These claims recite steps that transform a received signal vector to an estimate of the transmitted signal vector. As recited in claim 1, for example, a received signal vector is transformed and a search is performed in a reduced search space which eventually results in a next vector of elementary modulation symbols. As further recited in claim 1, demapped bit values are produced that correspond to a next identified vector of elementary modulation symbols of a lowest-level search. The next identified vector of elementary modulation symbols of the lowest-level search is an estimate of the transmit signal vector (i.e., demapped bit values).

Claims 1, 4, and 19 have been amended to explicitly recite that demapped bit values are produced. Applicant submits that by producing demapped bit values, the claim does have practical application by physical transformation and produces a useful, tangible, and concrete result. One purpose of demapping is to determine an estimate of the data bits (e.g., either hard decisions or soft decisions) that were actually transmitted. The demapped bit values, for

example, may now be decoded in the receiver to reproduce the data bits that were transmitted by a transmitter.

In view of the above, Applicant submits that the rejection of claims 1-13 and 19-22 under 35 U.S.C. § 101 has been overcome and that the claimed invention is directed to statutory subject matter.

### **RESERVATION OF RIGHTS**

In the interest of clarity and brevity, Applicant may not have addressed every assertion made in the Office Action. Applicant's silence regarding any such assertion does not constitute any admission or acquiescence. Applicant reserves all rights not exercised in connection with this response, such as the right to challenge or rebut any tacit or explicit characterization of any reference or of any of the present claims, the right to challenge or rebut any asserted factual or legal basis of any of the rejections, the right to swear behind any cited reference such as provided under 37 C.F.R. § 1.131 or otherwise, or the right to assert co-ownership of any cited reference. Applicant does not admit that any of the cited references or any other references of record are relevant to the present claims, or that they constitute prior art. To the extent that any rejection or assertion is based upon the Examiner's personal knowledge, rather than any objective evidence of record as manifested by a cited prior art reference, Applicant timely objects to such reliance on Official Notice, and reserves all rights to request that the Examiner provide a reference or affidavit in support of such assertion, as required by MPEP § 2144.03. Applicant reserves all rights to pursue any cancelled claims in a subsequent patent application claiming the benefit of priority of the present patent application, and to request rejoinder of any withdrawn claim, as required by MPEP § 821.04.

**CONCLUSION**

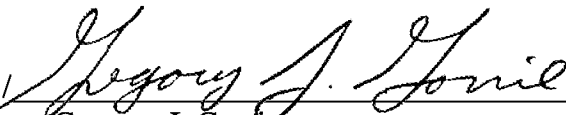
Applicant respectfully submits that the claims are in condition for allowance and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicant's attorney ((480) 659-3314) to facilitate prosecution of this application.

If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 19-0743.

Respectfully submitted,

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